

In the Claims:

Please cancel claims 1, 4-5, 18, 21, 23 and 42-45 and amend the remaining claims as follows:

1. (Cancelled).

2. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device according to claim 1, wherein a width of said wide lens is in the range of ~2 - ~10µm and a width of said aperture is in the range of ~0.8 - ~2µm.~~

3. (Original) The electronic device of claim 2, wherein a distance between said wide lens and said extractor is in the range of ~1µm - ~10µm, and a distance between said wide lens and said aperture is at least 0.7µm.

4. (Cancelled).

5. (Cancelled).

6. (Currently amended) An electronic device comprising:  
a substrate;

a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 5, wherein said extractor level focusing means further comprises a negatively biased electrode spaced apart from said circular electrode.;~~  
wherein said extractor level focusing means comprises said extractor being formed as a circular electrode about said well; and  
further comprising extractor level focusing means for focusing said emissions toward said aperture.

7. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting and/or controlling voltage variation of said tip emitter.~~

8. (Original) The electronic device of claim 7, wherein said means for stabilizing said emissions further limits voltage variation of said aperture.

9. (Original) The electronic device of claim 8, wherein said means for stabilizing said emissions further limits voltage variation of said wide lens.

10. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting voltage variation of said extractor.~~

11. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;

~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting voltage variation of said tip emitter to be less than or equal to  $\pm 5V$ .~~

12. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;

a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and

an aperture disposed between said extractor and said wide lens;

~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting voltage variation of said tip emitter to be less than or equal to  $\pm 2V$ .~~

13. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;

a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and

an aperture disposed between said extractor and said wide lens;

~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting voltage variation of said wide lens to be less than or equal to ~±5V.~~

14. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 1, further comprising means for stabilizing said emissions by limiting voltage variation of said extractor to be less than or equal to ~±2V.~~

15. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 1, wherein said well defined in said substrate has a depth to diameter aspect ratio in the approximate range of 0.75:1 – 1.25:1.~~

16. (Original) The electronic device of claim 15, wherein said well has a depth of ~0.5µm

17. (Currently amended) An electronic device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;  
~~The electronic device of claim 1, wherein said wide lens is spaced far enough away to focus said emissions onto a medium in a spot size less than ~35nm.~~

18. (Cancelled).

19. (Currently amended) An electronic device within a memory device comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and  
an aperture disposed between said extractor and said wide lens;

~~The electronic device of claim 1, formed as part of a memory device, the memory device including a plurality of said tip emitters and comprising:~~

    a plurality of respective wide lenses for focusing electron beams from the plurality of tip emitters to create focused beams; and

    a memory medium at the focal point of the focused beams, the memory medium having a storage area being in one of a plurality of states to represent information stored in the storage area, the states being responsive to the focused beam such that

        an effect is generated in the storage area when the focused beam impinges upon the storage area;

        a magnitude of the effect depends upon the state of the storage area; and

        information in the storage area is read by measuring the magnitude of the effect.

20. (Original) The electronic device of claim 19, further comprising:

    a mover to position said memory medium with respect to said plurality of tip emitters; and

    a reader circuit integrated in said mover.

21. (cancelled)

22. (Currently amended) An electronic device within a mass storage device comprising:

a substrate;

a well defined in said substrate;

a tip emitter formed in said well;

an extractor disposed about said well to extract emissions from said tip emitter;

a wide lens spaced apart from said extractor for focusing said emissions through an opening defined in said wide lens, said opening having a diameter greater than a diameter of said well; and

an aperture disposed between said extractor and said wide lens;

~~A mass storage device including a plurality of the electronic devices of claim 1, the mass storage device including a memory medium disposed at a focal point of said emissions.~~

23. (Cancelled).

24. (Original) An electronic device comprising:

a substrate;

a  $\sim 0.3 - \sim 0.5\mu\text{m}$  diameter and  $\sim 0.4 - \sim 0.6\mu\text{m}$  deep well defined in said substrate;

a tip emitter formed in said well;

an extractor disposed about said well to extract emissions from said tip emitter;

a wide lens disposed a length of  $\sim 2 - \sim 10\mu\text{m}$  from said extractor for focusing said emissions through an at least a  $\sim 2 - \sim 10\mu\text{m}$  diameter opening defined in said wide lens, wherein a ratio of said diameter to said length is greater than 1:1; and

an aperture disposed between said extractor and said wide lens.

25. (Original) The electronic device of claim 24, wherein said aperture is disposed a length of  $\sim 0.7 - \sim 5\mu\text{m}$  from said wide lens.

26. (Original) The electronic device of claim 25, wherein said aperture has a  $\sim 0.8 - \sim 2\mu\text{m}$  diameter.

27. (Original) The electronic device of claim 24, wherein said aperture has a  $\sim 0.8 - \sim 2\mu\text{m}$  diameter.

28. (Original) The electronic device according to claim 24, further comprising extractor level focusing means for focusing said emissions toward said aperture.

29. (Original) The electronic device of claim 28, wherein said extractor level focusing means comprises said extractor being formed as a circular electrode about said well.

30. (Original) The electronic device of claim 28, wherein said extractor level focusing means further comprises a negatively biased electrode spaced apart from said circular electrode.

31. (Original) The electronic device of claim 24, wherein said wide lens has a depth in the range of ~0.1 - 2 $\mu$ m(10 $\mu$ m).

32. (Original) The electronic device of claim 24, further comprising means for stabilizing said emissions.

33. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said tip emitter.

34. (Original) The electronic device of claim 33, wherein said means for stabilizing said emissions further limits voltage variation of said aperture.

35. (Original) The electronic device of claim 34, wherein said means for stabilizing said emissions further limits voltage variation of said wide lens.

36. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said extractor.

37. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said tip emitter to be less than or equal to  $\sim \pm 5V$ .

38. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said tip emitter to be less than or equal to  $\sim \pm 2V$ .

39. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said wide lens to be less than or equal to  $\sim \pm 5V$ .

40. (Original) The electronic device of claim 32, wherein said means for stabilizing said emissions limits voltage variation of said extractor to be less than or equal to  $\sim \pm 2V$ .

41. (Original) The electronic device of claim 24, wherein the tip emitter is one of a plurality of tip emitters formed in a respective plurality of wells, each of said plurality of emitters having a separate extractor disposed about its well, the plurality of emitters having their combined emissions focused by said wide lens and apertured by said aperture.

42. (Cancelled)

43. (Cancelled).

44. (Cancelled).

45. (Cancelled)

46. (Original) An electronic device, comprising:  
a substrate;  
a well defined in said substrate;  
a tip emitter formed in said well;  
an extractor disposed about said well to extract emissions from said tip emitter;  
means for limiting divergence of said emissions; and  
means for focusing said emissions into spot size of less than ~35nm.

47. (Original) The electronic device of claim 46, wherein said means for focusing and said means for limiting divergence are formed independently from said well, said tip emitter and said extractor.

48. (Original) The electronic device of claim 47, wherein said means for focusing comprises an electrostatic lens that has a diameter greater than a diameter of said well.

49. (Original) The electronic device of claim 48, wherein said means for limiting divergence comprises an aperture disposed between said extractor and said electrostatic lens, said aperture further being spaced apart from said electrostatic lens.

50. (Original) The electronic device of claim 46, further comprising means for collimating said emissions toward said means for focusing.

51. (Original) The electronic device of claim 46, wherein the tip emitter is one of a plurality of tip emitters formed in a respective plurality of wells, each of said plurality of emitters having a separate extractor disposed about its well, the plurality

of emitters having divergence of their combined emissions limited by said means for limiting divergence and focused by said means for focusing.